UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

Paul A Whitelaw and Leo Jago
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# CONTENTS

<table>
<thead>
<tr>
<th>SECTION</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABSTRACT</td>
<td>V</td>
</tr>
<tr>
<td>SUMMARY</td>
<td>VI</td>
</tr>
<tr>
<td>CHAPTER 1 BACKGROUND</td>
<td>1</td>
</tr>
<tr>
<td>CHAPTER 2 LITERATURE REVIEW—ACCOMMODATION RATING SYSTEMS</td>
<td>2</td>
</tr>
<tr>
<td>CONSUMER AND PROPRIETOR VIEWS</td>
<td>3</td>
</tr>
<tr>
<td>CONSUMER PREFERENCES IN CHOOSING ACCOMMODATION</td>
<td>3</td>
</tr>
<tr>
<td>STAR RATING, PRICING AND SERVICE QUALITY</td>
<td>4</td>
</tr>
<tr>
<td>SUMMARY</td>
<td>4</td>
</tr>
<tr>
<td>CHAPTER 3 AIMS AND METHOD</td>
<td>5</td>
</tr>
<tr>
<td>AIMS</td>
<td>5</td>
</tr>
<tr>
<td>METHOD</td>
<td>5</td>
</tr>
<tr>
<td>Review and analysis of Colmar-Brunton study</td>
<td>5</td>
</tr>
<tr>
<td>Focus groups</td>
<td>6</td>
</tr>
<tr>
<td>Conjoint study</td>
<td>6</td>
</tr>
<tr>
<td>CHAPTER 4 RESULTS</td>
<td>8</td>
</tr>
<tr>
<td>COLMAR-BRUNTON REPORT</td>
<td>8</td>
</tr>
<tr>
<td>FOCUS GROUPS</td>
<td>8</td>
</tr>
<tr>
<td>Information seeking</td>
<td>9</td>
</tr>
<tr>
<td>Decision-making process</td>
<td>9</td>
</tr>
<tr>
<td>Evaluation of accommodation facilities</td>
<td>9</td>
</tr>
<tr>
<td>The star rating system</td>
<td>9</td>
</tr>
<tr>
<td>CONJOINT STUDY</td>
<td>9</td>
</tr>
<tr>
<td>Structure of the conjoint model</td>
<td>9</td>
</tr>
<tr>
<td>The sample</td>
<td>10</td>
</tr>
<tr>
<td>Conjoint analysis—relative importance</td>
<td>12</td>
</tr>
<tr>
<td>Conjoint analysis—utility scores</td>
<td>16</td>
</tr>
<tr>
<td>CHAPTER 5 CONCLUSION</td>
<td>19</td>
</tr>
<tr>
<td>APPENDIX 1: CONJOINT ANALYSIS</td>
<td>20</td>
</tr>
<tr>
<td>APPENDIX 2: CONJOINT MODELLING MAPPING EXERCISE</td>
<td>23</td>
</tr>
<tr>
<td>APPENDIX 3: DETAILED CONJOINT RESULTS</td>
<td>25</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>69</td>
</tr>
<tr>
<td>AUTHORS</td>
<td>70</td>
</tr>
</tbody>
</table>
LIST OF FIGURES
Figure 1: Graph of utility scores 16

LIST OF TABLES
Table 1: Critical performance areas in classification and grading schemes 2
Table 2: Accommodation ratings, attributes and disappointments 4
Table 3: Gender of respondents 10
Table 4: Relationship status of respondents 10
Table 5: Family structure of respondents 11
Table 6: Household arrangements of respondents 11
Table 7: Age of respondents 11
Table 8: Home state of respondents 11
Table 9: Preferred accommodation type for next trip of respondents 12
Table 10: Preference ratings for hotel users 12
Table 11: Preference ratings for hotel users by age group 13
Table 12: Preference ratings for hotel users by frequency of usage 13
Table 13: Preference ratings for hotel users by preferred star rating 13
Table 14: Preference ratings for hotel users by travel party 14
Table 15: Preference ratings for hotel users by family structure 14
Table 16: Summary of overall preference ratings for hotel users 15
Table 17: Utility scores for hotel users 16
Table 18: Utility scores for hotel users by frequency of usage—all of the time 17
Table 19: Utility scores for hotel users by frequency of usage—most of the time 17
Table 20: Utility scores for hotel users by frequency of usage—some of the time 17
Table 21: Summary of utility scores for hotel users by frequency of usage 18
ABSTRACT

The report documents a project undertaken by Victoria University in conjunction with AAATourism. The aim of the research was to explore, conceptualise and operationalise the key dimensions of commercial accommodation and the relative importance placed upon those aspects by consumers.

The research involved three stages: a review of some preliminary consumer research undertaken by Colmar-Brunton Research for AAATourism; a series of focus groups; and an online consumer survey using conjoint modelling research techniques.

The key findings of the research are that a quantitative assessment system reflecting the priorities of consumers can be developed and operationalised. At a practical level, the research identified the relative importance of the various elements of an accommodation facility. The research findings can be used to provide guidance for improving a property’s rating and financial performance.

The research will primarily help AAATourism develop a property audit and reporting system (property rating) that is more in tune with consumers’ expectations. This information can also be used by AAATourism to help property operators to better understand the desires and priorities of their guests. This information can then be used to evaluate the appropriateness of various property improvement strategies and their likely impact upon both the property rating and likely customer acceptance. Such information can help improve both the quality of accommodation stock as well as the effectiveness and efficiency of such investment.
SUMMARY

This report documents a project undertaken by Victoria University in conjunction with AAATourism.

Objectives of Study

The aim of the research was to explore, conceptualise and operationalise the key dimensions of commercial accommodation and the relative importance placed upon those aspects by consumers. In particular, the aim was to bring a more systematic and objective approach to the metrics of accommodation property assessment. This assessment is the foundation of the “Star Rating” system used by many consumers when selecting accommodation. It is hoped that this research will lead to a more robust and reliable rating system, which in turn will lead to increased consumer confidence in the AAATourism ratings system.

Methodology

The research involved three stages: a review of some preliminary consumer research undertaken by Colmar-Brunton Research for AAATourism; a series of focus groups; and an online consumer survey using conjoint modelling research techniques.

The consumer research was undertaken by Colmar-Brunton at the request of AAATourism before the involvement of the CTSR. The CTSR’s involvement in this activity was restricted to re-analysing the data. The focus groups were used to generate a clearer understanding of a raft of issues related to using rating systems and the decision-making process. In particular, the four focus groups identified underlying elements of an accommodation property that were evaluated in the decision-making process. Using the findings from the focus groups, coupled with the extant evaluation system used by AAATourism, a seven-element conjoint model was developed for six different types of accommodation facilities. Using a commercial recruiting agency, an online national survey of 1,397 respondents was undertaken.

Key Findings

The key findings of the research are that a quantitative based assessment system reflecting the priorities of consumers can be developed and operationalised. At a practical level, the research identified the relative importance of the various elements of an accommodation facility. Finally, the research findings can be used to provide guidance for improving a property’s rating and financial performance.

The research will primarily help AAATourism develop a property audit and reporting system (property rating) that is more in tune with consumers’ expectations. This information can also be used by AAATourism to help property operators to better understand the desires and priorities of their guests. This information can then be used to evaluate the appropriateness of various property improvement strategies and their likely impact upon both the property rating and likely customer acceptance. Such information can help improve the quality of accommodation stock as well as the effectiveness and efficiency of such investment.

Future Action

Three major courses of action evolve from this project.

- Firstly, AAATourism can use these findings to update property auditing (Star Rating) systems to bring the weightings and scorings into line with consumer values.
- Secondly, an investment model using the key findings of this research and a combination of Monte Carlo Simulation and Markov Analysis can be developed. This model can forecast the impact of modifying the offerings of any aspect of the accommodation offering on both the Star Rating and likely customer satisfaction. This could be expanded by incorporating the likely costs of various improvement strategies to further evaluate the value of such investments.
- A comprehensive knowledge transfer program to AAATourism, industry consultants and accommodation operators should be undertaken to ensure the proper and fulsome dissemination of the aforementioned model and its application.
Chapter 1

BACKGROUND

Accommodation rating systems have been in existence since early last century and now operate in one form or another in virtually all developed countries and many developing countries. Although there is variation in the manner in which the various rating systems in different countries operate both in terms of ownership of the schemes and the standards that are set, there is a close alignment of the prime objectives of schemes.

AAATourism owns and manages Australia’s official Star Rating System, on behalf of Australia’s Auto Clubs, and provides Star Rating System assessments for approximately 10,000 accommodation properties across the country. In Australia, according to the AAATourism website, accommodation rating systems commenced in the mid-1950s when each of the nation’s state Auto Clubs established their own rating systems for hotels and motels operating in their respective states. Although great effort was made to ensure comparability between the different rating systems, there were still difficulties in having seven different rating systems in operation. In 1963, the Auto Clubs agreed to form AAATourism to manage the rating system on their behalf, which ensured national consistency and overcame the many problems associated with operating smaller rating systems. The rating system has been made more comprehensive, with the addition of assessments for a range of other accommodation types including caravan parks, onsite cabins, bed and breakfast facilities, and apartments.

The rating system is recognised for its role in informing consumers of the facilities available at accommodation properties and making an assessment as to the quality of the property. This assessment system focuses on the range of amenities, facilities and services offered at an accommodation property. This assessment is based upon a normative model developed by AAATourism (and its predecessor organisations) over more than 20 years and is subject to periodic, internal revision. Whilst it is generally standardised, the system has variations to deal with different types of accommodation, such as; hotels, motels, serviced apartments, caravan park cabins, caravan park sites, and hosted accommodation such as bed and breakfast and farm stay properties. For example, key components assessed in a motel include a number of aspects relating to bedroom and bathroom amenities, level of room service and availability of onsite staff. The number of stars awarded to a property is assessed according to the type, quantity and quality of product and service provided. Obviously, for the Star Rating Scheme to be widely accepted, it is important that the AAATourism assessment is consistent with the expectations and likely assessments of consumers. Whilst the internally generated normative model has served it well in the past, AAATourism is concerned that this assessment regime must truly reflect the evolving needs and values of the travelling public.

To achieve this goal, AAATourism commissioned Colmar-Brunton to investigate both the general and property specific elements assessed in the AAA Star Rating System. However, this work had two limitations. Firstly, it assumed the primacy of the existing items in the current assessment instrument; there was no investigation into the appropriateness of the inclusion or exclusion of any item. Secondly, it only assessed the validity of the internal weightings given to the different components within each of the major facilities offered at the accommodation property. That is, it assessed the relative importance of the components of a bedroom (bed, side table, mirror etc.) rather than the relative importance of a bedroom compared to other elements within an accommodation property such as public areas, bathroom, or sport and recreation facilities. As a consequence, results of the Colmar-Brunton study did not address all of the needs of AAATourism, which is why the Centre for Tourism and Services Research (CTSR) at Victoria University on behalf of the Sustainable Tourism Cooperative Research Centre was commissioned to undertake further research into the underpinnings of the AAATourism rating system.

The additional project undertaken by the CTSR consisted of three stages:
1. A re-analysis of the Colmar-Brunton data to identify the existence of any emerging themes and issues.
2. A series of focus groups to more fully explore these key themes and issues.
3. A quantitative survey based upon the findings of the focus groups to operationalise the key themes and issues.

Each stage contributes progressively to the development of a rich understanding of the relative importance, and thus weightings, for the key elements included in the Star Ratings System Audit Process. These stages shall be discussed in detail in turn.
Chapter 2

LITERATURE REVIEW—ACCOMMODATION RATING SYSTEMS

Accommodation Rating Systems (ARS) can be traced as far back as 1900, when Andre Michelin published a guide for those traveling in France to help them find lodgings and good food while touring. When motoring became popular, a star system was developed whereby inspectors visited establishments to award stars based on merit (Michelin Restaurants History n.d.). Essentially, the aim of an ARS is to provide the consumer with reliable guidance for making purchasing decisions (Gilbert 1990). Star rating systems exist across the globe and can be established at government, industry and private levels to provide a standardised guide for governments and consumers to assess tour operators, travel agencies, and hotels amongst others (Narangajavana & Hu 2008). Rating systems in accommodation are mostly comprised of two parts; a basic standard needed to meet government regulations, and a grading system which measures other tangible and intangible aspects, which can be compared to other properties (Callan 1993). Governments use rating systems to regulate safety in the hotel industry; tour operators and travel agents use them to choose accommodation for clients; the consumer uses them to compare accommodation; and hotels use the system as part of their branding and promotion. A number of symbols, such as stars, crowns, diamonds, suns and letters, have been used in rating systems, with one to five stars being used in many countries to rate accommodation (Narangajavana & Hu 2008).

Approximately 70 ARS exist worldwide (Kozak & Rimmington 1998), largely instigated by government or national tourism boards / administration / agencies (NTAs). There has been an increase in the number of such schemes in the last 10 years. The number funded by industry has also increased due to delegation by NTAs to accommodation associations (Parsons 2006). The current push by governments, accommodation providers, inbound tour operators and industry bodies to develop Australia as a quality tourism destination has been underpinned, amongst other programs, by the accommodation star ratings system. Star ratings have considerable consumer recognition and, although not necessarily the first consideration, play a role in the decision-making process with regard to accommodation purchases (AAA Tourism n.d.).

The reason for the increase in ARS in recent years is not clear but is most likely due to changing consumer expectations with regard to quality and consistency of standards across the accommodation industry. Significant increases in international travel in the past 15 years has created a knowledgeable and experienced travel market who are more discerning about their accommodation purchases (Parsons 2006). Although ARS have developed good standards and guidelines, there is further room for improvement to meet consumers’ changing expectations.

Table 1 identifies some of the critical performance areas in which classification and grading schemes lay down standards to be achieved and these include both tangible and intangible aspects (Kozak & Rimmington 1998).

<table>
<thead>
<tr>
<th>Critical performance areas in classification and grading schemes</th>
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<tbody>
<tr>
<td>• Welcome, friendliness and attitude.</td>
</tr>
<tr>
<td>• Customer care and attention.</td>
</tr>
<tr>
<td>• Atmosphere and environment.</td>
</tr>
<tr>
<td>• Appearance of staff.</td>
</tr>
<tr>
<td>• Professional level of staff.</td>
</tr>
<tr>
<td>• Presentation of food and drink.</td>
</tr>
<tr>
<td>• Quality of food and drink.</td>
</tr>
<tr>
<td>• Hygiene and sanitation.</td>
</tr>
<tr>
<td>• Safety and security.</td>
</tr>
<tr>
<td>• Level of service.</td>
</tr>
<tr>
<td>• Speed and efficiency of service.</td>
</tr>
<tr>
<td>• Quality of facilities.</td>
</tr>
<tr>
<td>• Variety of facilities.</td>
</tr>
<tr>
<td>• Tourist information.</td>
</tr>
<tr>
<td>• Decoration.</td>
</tr>
<tr>
<td>• Furnishings/furniture.</td>
</tr>
<tr>
<td>• Heating and lighting.</td>
</tr>
<tr>
<td>• Accessories in bedrooms.</td>
</tr>
<tr>
<td>• Availability of breakfast, dinner and room.</td>
</tr>
<tr>
<td>• Statutory obligations, e.g. the price display orders 1977-1979, the Food Safety Act 1990, Disability Discrimination Act 1995.</td>
</tr>
</tbody>
</table>

SOURCE: Adapted from Kozak and Rimmington 1998
Rating or grading schemes are mostly made up of compulsory and voluntary requirements (Ingram 1996), and divide accommodation into categories. The categories indicate specified facilities and services such as size of room, bathroom amenities, and provision of food and beverage services. The grading is a qualitative assessment of the accommodation facilities and evaluates how good or bad they may be, results in a rating being awarded (Callan 1995). The actual components assessed in the rating process are critical, given that consumers are making purchase choices based on the quality of the physical components, and considerable debate has taken place about the selection of each component and related sub-categories. However, there are other elements that influence consumer choice, such as ambience, accessibility, price, safety, friendly staff (Lockyer 2002) and service, location and views, which are not always considered in the rating system (Robinson 2007). For instance, a property can have the same rating whether it is located on a busy highway or in a peaceful lake setting (Robinson 2007). In the AAATourism rating system, one star indicates that the accommodation has basic facilities and service while the highest rating, five stars, represents international standard with a high level of facilities. Consumers staying in three to five star properties are more likely to use star ratings than those who stay in one or two star properties (Callan 1995).

The involvement of government in the rating systems, such as in Europe, has assisted in providing safety standards and a more consistent product for the consumer. As well, through regulation and planning laws for resorts, the image of the landscape has been controlled and in turn has contributed to the consistency of the destination image (Gilbert 1990), which is evident in some ski and island resort areas.

**Consumer and Proprietor Views**

The fact that different perceptions are often held by service providers and guests is not new, as illustrated by the development of the SERVQUAL model (Parasuraman, Berry & Zeithaml 1988). That model seeks to address the moments of truth, when the service provider has the opportunity to impress the customer through meeting the guests expectations (Radder & Wang 2006). It is therefore not surprising, in regard to the star rating system, that dissimilar views are held by the consumer and the accommodation provider in respect to the importance of tangible and intangible aspects of accommodation (Nasution & Mavondo 2008). The view of the provider often centres around valuing the system for the marketing advantages it provides to the business, which requires the proprietor to focus on improving the physical elements of the property. On the other hand, the consumer expects a certain standard of physical facilities to be present, but is also concerned with service quality, ambience, location, safety and other intangible aspects of the experience.

The rating system is only one aspect of choosing accommodation, and there are other “trigger” points such as price, location and facilities, which are often dependent on the purpose of the trip and will influence the purchase decision (Lockyer 2002). Lockyer (2002) also examined the most important selection factors for accommodation, from the perspectives of both management and business guests and found that both were most concerned about cleanliness, however, this is where the similarities ended.

The focus for the business guest concerned the facilities in the room followed by the friendliness and helpfulness of the staff. The management focus was on the efficiency and professionalism of staff, the reputation of the hotel, followed by the guest services and facilities.

From the consumer’s perspective, rating systems should provide an accurate portrayal of the tangible and intangible aspects of the property and be comprehensive and easy to understand (Ingram 1996). A study by Ingram and Daskalakis (1999) which examined the gaps between the consumer and the proprietor’s views found that guests in hotels in Greece placed more importance on tangible features such as a large hotel room than on service, while management were more focused on reliability and service provision. Recognition of the different views and expectations between management and guests in regard to star ratings allows management to address these gaps and move towards meeting the expectations of potential guests (Nasution & Mavondo 2008).

Like other forms of benchmarking, grading schemes have a limited life and are time sensitive. The star rating system should provide an accurate appraisal of the property that is consistent with the expectations of the consumer and, thus, businesses need to be monitored regularly in order to check that standards are being maintained or improved over time and have not deteriorated (Kozak & Rimmington 1998).

**Consumer Preferences in Choosing Accommodation**

Consumers’ choice of accommodation is based on a range of preferences that meet their needs.

The seminal work of (Wind, Green, Shifflet & Scarbrough 1989) explored the disposition of guests to trade off certain elements of the service offering in exchange for other elements. For example, some guests will happily trade the provision of recreational facilities in exchange for better quality bathrooms and vice versa.

Accommodation preferences will vary and are often dependent on whether the consumer is looking for accommodation for business or leisure. Dolnicar (2002) examined a number of studies about guest preference and accommodation ratings and found that business travellers will tend to choose accommodation that is in a convenient location, has a good reputation and offers value for money. Price was a discriminating factor between the different ratings of hotels, with the business guests who stayed in luxury hotels being relatively indifferent to
price. Business travellers’ expectations of facilities and services varied across star rated properties as shown in Table 2.

<table>
<thead>
<tr>
<th>Star Rating</th>
<th>Attributes</th>
<th>Disappointments</th>
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<tr>
<td>/**</td>
<td>1-2 star Shower, good food, TV, value for money</td>
<td>Cleanliness, food</td>
</tr>
<tr>
<td>***</td>
<td>3 star Good food, TV</td>
<td>Cleanliness, noise</td>
</tr>
<tr>
<td>****</td>
<td>4 star Pleasant atmosphere, large room</td>
<td>Too expensive</td>
</tr>
<tr>
<td>*****</td>
<td>5 star Good location, good service, pleasant atmosphere, large room, comfort</td>
<td>Service, personnel, bad quality</td>
</tr>
</tbody>
</table>

SOURCE: Adapted from Dolnicar (2002)

Generally, the guests that stayed at two and three star properties were most concerned with the tangible aspects of the property such as shower, food and TV, while those who stayed at four and five star properties focused on intangible attributes such as the service and the atmosphere.

**Star Rating, Pricing and Service Quality**

Accommodation providers also use the star rating system for promotion, branding and pricing (Israeli & Uriely 2000). Studies have shown that as the star rating increases, so does the price of accommodation and occupancy levels. However, these were both dependent on improvements to the physical facilities and intangible aspects such as staff training and atmosphere of the hotel. Lollar (1990) found that properties with four or five star ratings could charge any price they wished within reason. When service quality was examined against the star ratings, the ratings did not correspond with the level of service offered in most cases, which resulted in dissatisfied customers (Narangajavana & Hu 2008). This suggests that the star rating system requires both tangible and intangible aspects to be addressed to accommodate customer views and expectations, while still meeting regulatory and safety requirements.

**Summary**

This literature review has highlighted a number of key themes and issues relevant to this research. Firstly, it noted that there is an increasing emphasis on the need of consumers for reliable, accurate, quality information about accommodation establishments. Secondly, most consumers recognise that such establishments are multi-dimensional (most notably, physical facilities and intangible services) and that these elements can be offered at varying levels of sophistication and quality. Thirdly, and most contentiously, the extant research has identified the potential for dissonance between the expectations and values of service providers and their customers. This suggests that some properties may be acclaimed for providing services which are not valued by consumers, or, conversely, properties which provide highly valued services may not be appropriately recognised because such services are not included in the assessment regime undertaken by the rating authority.

These findings clearly suggest that AAATourism needs to carefully examine its proposed evaluation system to ensure that its ratings reflect the broader needs of the market and is not just an internally generated normative model.
Chapter 3

AIMS AND METHOD

Aims

This study sought to build upon an earlier study undertaken by Colmar-Brunton to provide a more comprehensive understanding of the key elements that drive consumer choice in accommodation. In turn, this information would form the basis of a critical review and redevelopment of the star ratings scheme undertaken by AAATourism. Such work will help improve approaches to and utilisation of the rating systems by more closely aligning the elements of the system with the identified and operationalised needs and priorities of consumers.

These aims will be pursued via a three stage research process.

Method

The Centre for Tourism and Services Research (CTSR) on behalf of the Sustainable Tourism Co-operative Research Centre conducted the research in three stages. Each stage was considered a separate but complementary study which contributed to the final stage, namely, the Conjoint Study.
1. Review and further analysis of Colmar-Brunton study
2. Focus groups to build on information in the Colmar-Brunton study
3. Conjoint study

Review and analysis of Colmar-Brunton study

This phase of the study involved a review and further analysis of the unit record files provided by Colmar-Brunton to identify whether there were any relationships between the key features of accommodation properties as measured by the AAATourism ratings system. The results are discussed in Chapter 4. A two-hour workshop was then undertaken with key staff at AAATourism to provide them with a more in-depth understanding of the Colmar-Brunton report as well as the results of further analysis of the data to clarify key relationships.

By way of background, Colmar-Brunton was commissioned to undertake a study to provide information relevant to the re-structuring of the classification schemes so as to ensure national consistency and industry acceptance. In 2006, the research was extended to investigate both the core and industry-specific elements covered by the AAATourism Star rating system from a customer perspective, with the following aims:

- Identify and prioritise the importance of essential items (or must haves) for STAR Ratings in all categories of accommodation.
- Identify and prioritise the needs of the consumer market for all STAR Rated accommodation from each industry sector.
- Understand whether consumers are aware that the STAR Rating scheme differs for each type of accommodation.
- Explore the dynamics of the STAR Ratings and how important they are when making a buying decision. (Colmar-Brunton 2007)

Colmar-Brunton utilised an online survey system to gather the data. Because of the number of items to be measured (32) and the likely consequence of respondent fatigue, Colmar-Brunton used a rotating list of items within each of the major elements wherein each respondent answered questions on only a few (between 4 and 6) of the available items (between 10 and 30). Whilst this minimised the incidence of respondent fatigue, it meant that the overall sample had to be large to ensure that there were sufficient respondents for each item. As a result, only 130 respondents out of 1,284 completed an assessment on each item. This approach also precluded comprehensive cross item analysis.
Focus groups

On completion of the literature review, focus groups were held to explore the themes identified in the literature and to establish the key elements of accommodation offerings that drive decision making by consumers in finding and choosing holiday accommodation. A series of four focus groups was conducted with people who were members of the RACV and who had taken a holiday involving paid accommodation in the past 12 months. Each of the four focus groups had a particular sociodemographic profile as follows:

- Older couples (near retirees who travel without children)
- Couples with older children, typically teenage children
- Couples with younger children, typically primary school aged children
- Couples without children

Each focus group lasted about 90 minutes. Whilst the groups were audio recorded and summary and thematic notes prepared, they were not transcribed.

Data from the focus groups on the role of star ratings in consumer choice were then used to develop the conjoint study.

Conjoint study

To gain a better understanding of the needs, wants and preferences of consumers, a conjoint analysis survey was undertaken. The interested reader is directed to Appendix 1 for a discussion of the background and key characteristics of conjoint analysis.

In this phase of the research a series of conjoint analyses, each reflecting a different type of accommodation, was undertaken. In total, six conjoint models were developed, one for each of the following accommodation types:

- Hotel
- Motel
- Serviced apartment
- Caravan park cabins
- Caravan park sites
- Hosted accommodation (bed and breakfast and farm stay)

The development of the conjoint models involved the integration of the key findings of the focus groups and the extant elements incorporated in the normative models currently used by AAATourism. This integration process involved a series of mapping exercises with key AAATourism staff. This involved deconstructing the AAATourism property audit document as well as promotional literature to ensure the proper conceptualisation and operationalisation of the key elements of an accommodation property. More specifically, the process involved developing an array of new elements identified in the focus groups and mapping them to the existing elements as used by AAATourism. The resultant matrix thus contained definitions and examples of the provision of the elements at various levels and showed how these new elements were linked to the pre-existing elements. An example of this mapping matrix is provided in Appendix 2. The survey instrument underwent several development iterations, including three pilot tests with collaborators, associates and a small sub sample of potential respondents.

The research design involved an online survey. After screening, respondents were asked a series of questions about past and planned travel behaviour and accommodation preferences. Based on the respondent’s most likely accommodation for their next holiday, they were branched to the respective conjoint analysis section. That is, if the respondent nominated hotel accommodation as the most likely, then the respondent was branched to do the hotel accommodation conjoint model. There were six conjoint branches, one for each of the aforementioned types of accommodation.

Upon completion of the branch, the respondent was directed to a series of sociodemographic questions covering age, gender, domestic status, family structure, highest level of education, employment status, place of residence and a general lifestyle question wherein the respondent was asked to place him/herself into one of ten broadly described sociodemographic and lifestyle groupings.

Each conjoint model comprised 20 property scenarios wherein the seven key dimensions were offered in various levels. The manner in which the key dimensions were identified and discussion of the dimensions themselves and their levels will be covered in the results chapter. The respondents were asked to fully consider each of the attributes and the respective levels of each attribute. They were asked to indicate how much they would like to stay at that particular property using a nine point likert scale ranging from 1 (I would NOT like to stay at that property) to 9 (I would VERY MUCH like to stay at that property).

As indicated earlier, the data were gathered by way of an online survey. Respondents were recruited by a professional recruitment agency that uses a redemption based incentive system to recruit and reward participants. The selection criteria for the participants were that they had to be aged between 20 and 70 years and had taken a holiday in Australia during the last 12 months wherein they stayed in commercial accommodation. They also
needed to be intending to take a holiday in Australia in the next 12 months wherein they expect to stay in commercial accommodation. In this instance, commercial accommodation was defined as one of the six aforementioned types of accommodation.

In total, there were 132 questions. The survey went live on Friday 20 June 2008 at 5:00pm and was closed, with 1,437 respondents on Monday 23 June at noon. Of the 1,437 respondents, 1,397 were usable. The unusable 40 respondents were excluded because they failed to nominate an expected type of accommodation to be used on their next holiday.

The online data were captured directly into a “*.csv” file which was then read directly into SPSS.
Chapter 4

RESULTS

Colmar-Brunton Report

The results from Colmar-Brunton will be dealt with at two levels. At the first level will be the key findings from the original Colmar-Brunton research. Such information will help set the framework for the subsequent analysis of both the Colmar-Brunton study and the conjoint analysis. We thank AAATourism for permission to reproduce the information from the Colmar-Brunton report that is detailed below.

Awareness of the accommodation rating scheme was quite high (68%), with over half (53%) of those who were aware mentioning Star Ratings without prompting. Most respondents had used the STAR Rating Scheme (91%) and the utilisation rate was very high (29% always and 55% most of the time). Leisure trips (i.e. holiday and short breaks/weekend trips) seemed to be the occasions when the STAR Rating Scheme was used the most. The usefulness and clarity of STAR Rating Scheme were well-accepted by the respondents; however, there was less confidence in the reliability of the system. The intention to use the STAR Rating Scheme in the future (regardless of having previous usage experience or not) was very high (96%).

- The majority of travellers still preferred to use a conventional method to book their accommodation (i.e. direct to the property by phone). However, more people in metro areas have started to embrace the internet (i.e. through accommodation booking websites on the property’s own website).
- Reliability, usefulness, and clarity of the STAR Rating Scheme were well-accepted. This was reflected in the high utilisation rate (91%) and intention to use in the future (96%).
- When choosing accommodation, people considered value for money, price, and quality as the most important factors, followed by location, services and facilities offered, and the property’s STAR Rating. Previous stay experiences and marketing initiatives were among the least important aspects.

Whilst the Colmar-Brunton report provided some very good information, such as that provided above, it did not entirely address the needs of AAATourism.

Based on our subsequent analysis of the Colmar-Brunton study, we believe there were two flaws with the research design. Firstly, the instrument was built upon the existing audit instrument currently used by AAATourism property inspectors. As a result, the research was not oriented towards identifying any new elements that may be valued by consumers. Secondly, the outcome of that research was a series of assessments of the relative importance of the components within an element; e.g. the relative importance of the bedding configuration compared to the provision of a seat in a hotel room. However, it was not possible to assess the relative importance of two elements; e.g. the relative importance of the bedroom compared to the bathroom in a hotel. As such, AAATourism was still not able to make a consumer-based assessment on the weightings to be given to each of the key features of an accommodation property.

The results of this analysis of the Colmar-Brunton data confirm the need for focus groups and the application of conjoint analysis to identify the appropriate key elements for inclusion in the assessment regime and to measure their relative importance. The measures of relative importance can then be used to develop the weightings for the property assessment audits.

Focus Groups

As indicated, four focus groups were held. The discussions covered a range of issues related to the information seeking, decision-making process, evaluation of accommodation facilities and reliance placed on the star rating system.

The aspects that were important to participants related to life situations as well as holiday needs and preferences. The internet is fast becoming, indeed, is probably already, the most important channel of information and means of booking accommodation. Because of the much greater range and type of information available through the internet, people’s reliance on the star rating scheme is perhaps waning, with some younger people saying they are ready to abandon it. However, most people still pay some attention to star ratings and the fact that most accommodation websites organise their listings by some form of star ratings suggest the system will continue to be relevant. Most importantly, there is little doubt that confidence in and reliance on the system could be improved with public information campaigns to help people understand how it works, what it covers, what the categories are and how frequently properties are assessed.
Information seeking

Within the broad medium of the internet there are a number of different modes used to find accommodation, such as Google; travel sites such as Flight Centre, Qantas; accommodation sites such as wotif.com and lastminute.com; and affinity sites such as RACV. By far the most popular means of finding accommodation whilst on holidays was the internet.

There are many other sources of information people use, such as word of mouth from friends and relatives, accommodation brochures from travel agents and printed guides. There are still those who simply travel to a destination and then find somewhere to stay.

Decision-making process

People are turning to websites, such as TripAdvisor.com, that have comments from people who have stayed at particular hotels. Some argue that this information is better than a star system, but others worry about the authenticity of the entries on such sites. The participants also suggested that what you can find on the internet doesn’t guarantee success.

Evaluation of accommodation facilities

Whilst location, price and accommodation standard are more or less universal factors of importance in choosing accommodation, other factors vary according to people’s life situation and reflect obvious priorities and needs. Thus, for younger people it will be things like proximity to the beach, a swimming pool or gymnasium. For older people it will be facilities like restaurants, while for those with younger children features like a pool and proximity to leisure attractions such as theme parks play a role.

The star rating system

The participants all knew about star ratings, but opinions of them varied from a complete distrust to a confident reliance on them. Older people seemed to place more importance on them, but used the internet as well. Most people didn’t have a clear idea how the ratings were derived. Some aligned the rating with the price, some suggested that price would be a more accurate indication of the standard of the facility than the stars, and others thought the symbols were more indicative of the facilities. The responses suggested that people didn’t always perceive consistency in the system, both in how they think ratings are derived and in their judgement that different properties with the same ratings could seem quite different. Also, sometimes they had stayed at properties that did not seem to justify the given star rating. Yet, despite these problems, people were generally still making some use of the star ratings, if only as a starting point, but they recognised that the rating system is from a time before the internet.

Conjoint Study

Structure of the conjoint model

As previously mentioned, a comprehensive mapping exercise was undertaken to link the pre-existing accommodation elements (from the AAATourism audits) to the elements that emerged from the focus groups. This mapping process was documented in the methods section, and an example of one of the mapping matrices is included in Appendix 2.

One of the key requirements of the process was to produce a seven-element conjoint model that could be universally applied across the six types of accommodation under investigation. The seven elements were:

- Bedroom
- Bathroom
- Public areas
- Guest services
- Recreation facilities
- Food and beverage services
- Exterior

And the six types of accommodation were:

- Hotel
- Motel
- Caravan park site
- Caravan park cabin
- Self contained unit / holiday flat
- Hosted accommodation / bed and breakfast / farmstay
There were many instances where the conceptualisation and operationalisation for an element was exactly the same across the six different types of accommodation establishment. For example, irrespective of the type of accommodation establishment, exterior, recreation facilities and guest services were essentially the same. There were, however, a few instances where some of the elements were modified considerably between different types of accommodation. In particular:

- Bedroom, whilst generally referring to a private bedroom in most accommodation establishments, referred to a “caravan site” in the caravan park site.
- Bathroom, whilst generally referring to a private ensuite style bathroom in most accommodation establishments, referred to communal showers with caravan park site.
- Public areas, whilst generally referring to the guest lounges in most types of accommodation, referred to the private lounge areas in the self contained unit / holiday flat.

Despite these differences, each conjoint model was separately specified with seven elements, each offered at three levels with its own, unique terminology and descriptions for each of the six types of accommodation. This is because, fundamentally, each accommodation type warrants its own analysis and thus model. None the less, by aggregating the models across the six different types of accommodation, a generalised set of priorities and preferences can be established.

The results from the conjoint study will be presented in three sections:

- Overview of the sample, including respondent profile and travel behaviour;
- Conjoint analysis – relative importance; and
- Conjoint analysis – utility scores.

As indicated earlier, six conjoint models were run for six different accommodation types. Rather than discussing the details for each individual model in the body of this report, only the results for the hotel accommodation model are presented. Additional details for key respondent groups, such as those based on travel behaviour, quality preferences, age, gender, family status as well as discussion of the other five models are presented in Appendix 3.

The sample

As indicated, 1,437 persons attempted the survey, with 1,397 successfully completing and providing usable answers. Demographic characteristics for the respondents are presented in Tables 3 to 8. These results suggest that the sample is, in most respects, broadly consistent with the characteristics of Australia’s general population (ABS cat. 3201.01, Table 9).

<table>
<thead>
<tr>
<th>GENDER</th>
<th>FREQUENCY</th>
<th>%</th>
<th>ABS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>661</td>
<td>47.3</td>
<td>49.7</td>
</tr>
<tr>
<td>Female</td>
<td>736</td>
<td>52.7</td>
<td>50.3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1,397</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RELATIONSHIP STATUS</th>
<th>NUMBER</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>238</td>
<td>17.0</td>
</tr>
<tr>
<td>Couple (married / de facto)</td>
<td>1,047</td>
<td>74.9</td>
</tr>
<tr>
<td>Was Single</td>
<td>112</td>
<td>8.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1,397</td>
<td>100.0</td>
</tr>
</tbody>
</table>
The great strength of conjoint analysis is that it can present a valid conjoint model for very small sub-samples, even individuals. To this end, weighting can be used to re-balance the influence of the older respondents and segmenting the sample in age-based groups can be undertaken to avoid distorting the data. Furthermore, subsequent analysis of the results by age group did not identify any significant differences across the age groups in terms of the relative importance placed on the seven elements used in the conjoint studies.
As indicated, the respondents were asked to nominate the most likely type of accommodation to be used on their next trip. The response to this question determined which branch and thus which type of accommodation they would evaluate in the conjoint analysis. The answers to this question are provided in Table 9 below.

Table 9: Preferred accommodation type for next trip of respondents

<table>
<thead>
<tr>
<th>PREFERRED ACCOMMODATION</th>
<th>NUMBER</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotel</td>
<td>495</td>
<td>35.4</td>
</tr>
<tr>
<td>Motel</td>
<td>381</td>
<td>27.3</td>
</tr>
<tr>
<td>Caravan Park Site</td>
<td>99</td>
<td>7.1</td>
</tr>
<tr>
<td>Caravan Park Cabin</td>
<td>119</td>
<td>8.5</td>
</tr>
<tr>
<td>Self Contained Unit / Holiday Flat</td>
<td>284</td>
<td>20.3</td>
</tr>
<tr>
<td>Hosted Accommodation / Bed &amp; Breakfast / Farmstay</td>
<td>19</td>
<td>1.4</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1,397</td>
<td>100.0</td>
</tr>
</tbody>
</table>

AAATourism indicated that this distribution of responses is reflective of the distribution of properties in their database.

Conjoint analysis—relative importance

The data contained in Table 9 indicates the number of respondents who will undertake each of the six different conjoint models. For the purposes of brevity, this part of the analysis shall cover only the hotel accommodation model. Detailed results for the other types of accommodation can be found in Appendix 3.

Whilst 495 attempted the conjoint analysis model for hotel accommodation, 47 respondents had $r^2$ values that were below 0.90. As discussed in Appendix 2, the $r^2$ can be used to assess the quality of the respondent’s answers, particularly with regard to correctly following instructions, carefully considering each scenario and ultimately, in terms of respondent fatigue. Therefore, the cut off point was set at 0.90 and thus respondents with an $r^2$ below 0.90 were removed from this part of the analysis. As a result, a total of 448 hotel users have been used to report the conjoint results that appear in Table 10. For these respondents, the bedroom and bathroom were most important, with recreation relatively more important than food and beverage. However, beyond the top two items, bedroom and bathroom, there were no significant differences amongst the remaining five elements.

Table 10: Preference ratings for hotel users

<table>
<thead>
<tr>
<th>HOTEL USERS (n=448)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bedroom</td>
<td>26.3</td>
</tr>
<tr>
<td>Bathroom</td>
<td>17.9</td>
</tr>
<tr>
<td>Recreation</td>
<td>12.0</td>
</tr>
<tr>
<td>Food &amp; Beverage</td>
<td>11.3</td>
</tr>
<tr>
<td>Services</td>
<td>11.1</td>
</tr>
<tr>
<td>Private / Public Areas</td>
<td>10.8</td>
</tr>
<tr>
<td>Exterior</td>
<td>10.6</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100.0</td>
</tr>
</tbody>
</table>

These values are particularly important for those who conduct the assessments of hotel properties and the auditors of this process. They highlight those areas that are most important to guests and therefore those that should receive the greatest weightings. Given that these are true metric values where in a bedroom at 26.3 is considered more than twice as important as recreation facilities at 12.0, actually 2.19 times, it is feasible to transpose these weightings directly into the AAATourism property assessment regime.
As indicated earlier, a suite of cross-analyses can be undertaken based upon the respondent profile in order to identify whether there are differences in preferences between the different categories of respondent. Some such results are presented in Tables 11 to 15.

### Table 11: Preference ratings for hotel users by age group

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>AGE GROUP</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20s (n=128)</td>
<td>30s (n=92)</td>
<td>40s (n=67)</td>
<td>50s (n=127)</td>
<td>60s (n=34)</td>
</tr>
<tr>
<td>Bedroom</td>
<td>25.1</td>
<td>26.4</td>
<td>27.4</td>
<td>26.4</td>
<td>27.7</td>
</tr>
<tr>
<td>Bathroom</td>
<td>18.1</td>
<td>18.1</td>
<td>16.7</td>
<td>18.5</td>
<td>17.0</td>
</tr>
<tr>
<td>Private / Public Areas</td>
<td>12.4</td>
<td>10.6</td>
<td>10.5</td>
<td>9.8</td>
<td>9.4</td>
</tr>
<tr>
<td>Food and Beverage Services</td>
<td>10.9</td>
<td>11.4</td>
<td>11.6</td>
<td>11.5</td>
<td>11.8</td>
</tr>
<tr>
<td>Services</td>
<td>11.2</td>
<td>9.7</td>
<td>9.5</td>
<td>12.7</td>
<td>12.2</td>
</tr>
<tr>
<td>Recreation</td>
<td>11.6</td>
<td>14.2</td>
<td>13.3</td>
<td>10.4</td>
<td>10.5</td>
</tr>
<tr>
<td>Exterior</td>
<td>10.7</td>
<td>9.7</td>
<td>11.0</td>
<td>10.7</td>
<td>11.3</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

### Table 12: Preference ratings for hotel users by frequency of usage

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>FREQUENCY OF USAGE (%)</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All the time (n=61)</td>
<td>Most of the time (n=265)</td>
<td>Some of the time (n=111)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bedroom</td>
<td>24.7</td>
<td>26.8</td>
<td>26.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bathroom</td>
<td>17.5</td>
<td>17.8</td>
<td>18.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public Areas</td>
<td>10.7</td>
<td>10.8</td>
<td>10.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guest Services</td>
<td>12.7</td>
<td>10.8</td>
<td>11.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recreation Facilities</td>
<td>10.4</td>
<td>11.4</td>
<td>11.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food and Beverage Services</td>
<td>13.0</td>
<td>12.0</td>
<td>11.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exterior</td>
<td>11.0</td>
<td>10.5</td>
<td>10.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 13: Preference ratings for hotel users by preferred star rating

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>STAR RATING (%)</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;3.0 (n=6)</td>
<td>3.0 (n=29)</td>
<td>3.5 (n=64)</td>
<td>4.0 (n=194)</td>
<td>4.5 (n=99)</td>
</tr>
<tr>
<td>Bedroom</td>
<td>29.0</td>
<td>21.6</td>
<td>25.9</td>
<td>27.5</td>
<td>26.4</td>
</tr>
<tr>
<td>Bathroom</td>
<td>16.5</td>
<td>16.6</td>
<td>18.8</td>
<td>18.5</td>
<td>17.0</td>
</tr>
<tr>
<td>Public Areas</td>
<td>10.8</td>
<td>11.4</td>
<td>10.9</td>
<td>10.7</td>
<td>10.5</td>
</tr>
<tr>
<td>Guest Services</td>
<td>12.5</td>
<td>11.5</td>
<td>11.3</td>
<td>10.0</td>
<td>10.9</td>
</tr>
<tr>
<td>Recreation Facilities</td>
<td>10.4</td>
<td>12.6</td>
<td>11.8</td>
<td>11.1</td>
<td>10.6</td>
</tr>
<tr>
<td>Food and Beverage Services</td>
<td>10.0</td>
<td>14.5</td>
<td>11.1</td>
<td>10.9</td>
<td>13.5</td>
</tr>
<tr>
<td>Exterior</td>
<td>10.7</td>
<td>11.8</td>
<td>10.3</td>
<td>10.3</td>
<td>11.0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
Table 14: Preference ratings for hotel users by travel party

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>On business and travelling alone (n=63)</th>
<th>On holidays alone or with partner and no children (n=215)</th>
<th>On holidays with adult friends and/or immediate family and/or extended family but no children (n=100)</th>
<th>On holidays with adult friends and/or immediate family and/or extended family and with children (n=70)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bedroom</td>
<td>27.0</td>
<td>26.6</td>
<td>25.9</td>
<td>25.1</td>
</tr>
<tr>
<td>Bathroom</td>
<td>16.5</td>
<td>18.2</td>
<td>18.4</td>
<td>17.8</td>
</tr>
<tr>
<td>Public Areas</td>
<td>11.6</td>
<td>10.8</td>
<td>10.6</td>
<td>10.4</td>
</tr>
<tr>
<td>Guest Services</td>
<td>11.4</td>
<td>11.3</td>
<td>11.6</td>
<td>11.0</td>
</tr>
<tr>
<td>Recreation Facilities</td>
<td>11.0</td>
<td>11.8</td>
<td>11.1</td>
<td>9.4</td>
</tr>
<tr>
<td>Food and Beverage Services</td>
<td>12.5</td>
<td>10.7</td>
<td>12.3</td>
<td>14.9</td>
</tr>
<tr>
<td>Exterior</td>
<td>10.1</td>
<td>10.6</td>
<td>10.2</td>
<td>11.4</td>
</tr>
<tr>
<td>TOTAL</td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Whilst there is some change in the magnitude of the ratings across some of these groups, as discussed below, the most significant finding in these results is the universal consistency of the prime importance of the bedroom followed by the bathroom. Table 16 summarises these results.

Table 15: Preference ratings for hotel users by family structure

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>Do not have children (n=209)</th>
<th>Younger family, mostly under 10 years (n=79)</th>
<th>Middle family, mostly young teenagers (n=32)</th>
<th>Older family, independent adults (n=128)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bedroom</td>
<td>25.1</td>
<td>25.8</td>
<td>26.7</td>
<td>28.4</td>
</tr>
<tr>
<td>Bathroom</td>
<td>18.7</td>
<td>17.1</td>
<td>14.6</td>
<td>18.0</td>
</tr>
<tr>
<td>Public Areas</td>
<td>12.0</td>
<td>10.1</td>
<td>10.6</td>
<td>9.2</td>
</tr>
<tr>
<td>Guest Services</td>
<td>11.1</td>
<td>12.1</td>
<td>12.0</td>
<td>11.0</td>
</tr>
<tr>
<td>Recreation Facilities</td>
<td>11.2</td>
<td>9.1</td>
<td>12.2</td>
<td>12.0</td>
</tr>
<tr>
<td>Food and Beverage Services</td>
<td>11.3</td>
<td>15.8</td>
<td>12.6</td>
<td>10.5</td>
</tr>
<tr>
<td>Exterior</td>
<td>10.5</td>
<td>10.0</td>
<td>11.3</td>
<td>10.9</td>
</tr>
<tr>
<td>TOTAL</td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
Table 16: Summary of overall preference ratings for hotel users

<table>
<thead>
<tr>
<th>(n)</th>
<th>Bedroom</th>
<th>Bathroom</th>
<th>Recreation</th>
<th>Food &amp; Beverage</th>
<th>Services</th>
<th>Private Public Areas</th>
<th>Exterior</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL</td>
<td>448</td>
<td>26.3</td>
<td>17.9</td>
<td>12.0</td>
<td>11.3</td>
<td>11.1</td>
<td>10.8</td>
</tr>
</tbody>
</table>

**Age Group**

- **20s**: 128, Bedroom 25.1, Bathroom 18.1, Recreation 12.4, Food & Beverage 10.9, Services 11.2, Private Public Areas 11.6, Exterior 10.7
- **40s**: 67, Bedroom 27.4, Bathroom 16.7, Recreation 10.5, Food & Beverage 11.6, Services 9.5, Private Public Areas 13.3, Exterior 11.0
- **50s**: 127, Bedroom 26.4, Bathroom 18.5, Recreation 9.8, Food & Beverage 11.5, Services 12.7, Private Public Areas 10.4, Exterior 10.7
- **60s**: 34, Bedroom 27.7, Bathroom 17.0, Recreation 9.4, Food & Beverage 11.8, Services 12.2, Private Public Areas 10.5, Exterior 11.3

**Frequency of Use**

- **All the time**: 448, Bedroom 26.3, Bathroom 17.9, Recreation 12.0, Food & Beverage 11.3, Services 11.1, Private Public Areas 10.8, Exterior 10.6
- **Most of the time**: 265, Bedroom 26.8, Bathroom 17.8, Recreation 10.8, Food & Beverage 10.8, Services 11.4, Private Public Areas 12.0, Exterior 10.5
- **Some of the time**: 111, Bedroom 26.5, Bathroom 18.3, Recreation 10.7, Food & Beverage 11.8, Services 11.1, Private Public Areas 11.1, Exterior 10.4
- **<3.0**: 6, Bedroom 29.0, Bathroom 16.5, Recreation 10.8, Food & Beverage 12.5, Services 10.4, Private Public Areas 10.0, Exterior 10.7
- **3**: 29, Bedroom 21.6, Bathroom 16.6, Recreation 11.4, Food & Beverage 11.5, Services 12.6, Private Public Areas 14.5, Exterior 11.8
- **3.5**: 64, Bedroom 25.9, Bathroom 18.8, Recreation 10.9, Food & Beverage 11.3, Services 11.8, Private Public Areas 11.1, Exterior 10.3
- **4**: 194, Bedroom 27.5, Bathroom 18.5, Recreation 10.7, Food & Beverage 10.0, Services 11.1, Private Public Areas 10.9, Exterior 10.3
- **4.5**: 99, Bedroom 26.4, Bathroom 17.0, Recreation 10.5, Food & Beverage 10.9, Services 10.6, Private Public Areas 13.5, Exterior 11.0
- **5**: 50, Bedroom 25.5, Bathroom 17.2, Recreation 11.2, Food & Beverage 12.8, Services 10.6, Private Public Areas 12.7, Exterior 10.0

**Star Rating**

- **On business and travelling alone**: 63, Bedroom 27.0, Bathroom 16.5, Recreation 11.6, Food & Beverage 11.4, Services 11.0, Private Public Areas 12.5, Exterior 10.1
- **On holidays alone or with partner and no children**: 215, Bedroom 26.6, Bathroom 18.2, Recreation 10.8, Food & Beverage 11.3, Services 11.8, Private Public Areas 10.7, Exterior 10.6
- **On holidays with adult friends and/or immediate family and/or extended family but no children**: 100, Bedroom 25.9, Bathroom 18.4, Recreation 10.6, Food & Beverage 11.6, Services 11.1, Private Public Areas 12.3, Exterior 10.2
- **On holidays with adult friends and/or immediate family and/or extended family and with children**: 70, Bedroom 25.1, Bathroom 17.8, Recreation 10.4, Food & Beverage 11.0, Services 9.4, Private Public Areas 14.9, Exterior 11.4

**Travel Party**

- **Do not have children**: 209, Bedroom 25.1, Bathroom 18.7, Recreation 12.0, Food & Beverage 11.1, Services 11.2, Private Public Areas 11.3, Exterior 10.5
- **Younger family, mostly under 10 years**: 79, Bedroom 25.8, Bathroom 17.1, Recreation 10.1, Food & Beverage 12.1, Services 9.1, Private Public Areas 15.8, Exterior 10.0
- **Middle family, mostly young teenagers**: 32, Bedroom 26.7, Bathroom 14.6, Recreation 10.6, Food & Beverage 12.0, Services 12.2, Private Public Areas 12.6, Exterior 11.3
- **Older family, independent adults**: 128, Bedroom 28.4, Bathroom 18.0, Recreation 9.2, Food & Beverage 11.0, Services 12.0, Private Public Areas 10.5, Exterior 10.9

A comprehensive schedule of these analyses for each type of accommodation is provided in Appendix 3.
Conjoint analysis—utility scores

Analysis of the utility scores can also provide a key insight into the nature of users’ preferences. However, it is necessary to note that the scores are highly abstracted and typically range from a small negative to a small positive number. Utility scores can be used in a variety of activities, such as forecasting demand and sensitivity analysis. For a more detailed discussion on this application, the interested reader is directed to the seminal work by (Wind, Green, Shifflet & Scarbrough 1989). However, for the purposes of this research, the utility scores can be used to gain a broad sense of the consumer’s sensitivity to the “level” of the service or facility offering. That is, the utility scores can act as a guide to the number of points that can be awarded given the level or quality at which an element is offered. The utility scores for each level offering for each element for a hotel are presented in Table 16 below.

<table>
<thead>
<tr>
<th>HOTEL ELEMENTS (n=448)</th>
<th>LOW</th>
<th>MEDIUM</th>
<th>HIGH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bedroom</td>
<td>-1.235</td>
<td>0.321</td>
<td>0.914</td>
</tr>
<tr>
<td>Bathroom</td>
<td>-0.752</td>
<td>0.140</td>
<td>0.612</td>
</tr>
<tr>
<td>Public Areas</td>
<td>-0.144</td>
<td>-0.100</td>
<td>0.245</td>
</tr>
<tr>
<td>Food &amp; Beverage Facilities</td>
<td>-0.230</td>
<td>0.028</td>
<td>0.202</td>
</tr>
<tr>
<td>Guest Services</td>
<td>-0.295</td>
<td>0.068</td>
<td>0.227</td>
</tr>
<tr>
<td>Recreation Facilities</td>
<td>-0.365</td>
<td>0.167</td>
<td>0.198</td>
</tr>
<tr>
<td>Exterior</td>
<td>-0.131</td>
<td>0.068</td>
<td>0.063</td>
</tr>
</tbody>
</table>

These results can also be graphed to enhance their interpretation. A graph of the hotel utility scores is produced in Figure 1.

![Figure 1: Graph of utility scores](image)

As discussed in Appendix 2, the nature of the lines provides a key insight into the consumer’s attitudes towards the object. Of particular interest is the kinked curve which moves steeply from low to medium, but then moves with a much lower gradient from medium to high. In the three tables that follow, the low, medium and high refer to the quality and quantity of the offering. For example, a “low quality” bedroom was described in the survey as a fairly simple configuration of bed and bedside table with a small television in contrast to a “high quality” bedroom which was described as comprising large bed, bedroom chairs and furniture, high quality entertainment facilities and the like. The graph suggests that consumers would be particularly unhappy with a simple, low quality bedroom. Their sense of utility (happiness, satisfaction) would increase significantly if they
were offered a medium quality bedroom. However, as suggested by the less steep line from medium to high, their sense of utility would not increase as much in moving from medium to high, as it did from low to medium.

This finding is of critical importance for accommodation raters. It clearly suggests that property raters can focus on the calibration of points for the various levels of quality. That is, the difference in the utility scores across the three levels can be used as a proxy to guide the actual scores given for the quality aspects of the items being assessed.

As with the importance scores in the previous section, the utility scores for a variety of respondent groups can provide a clearer insight into the preferences and sensitivities of the respondents. A single table could cover all of the groups within one segmentation paradigm, such as usage, however, a separate table is required for each segmented group for the importance scores. The utility scores for the three usage groups are presented in Tables 18 to 20.

Table 18: Utility scores for hotel users by frequency of usage— all of the time

<table>
<thead>
<tr>
<th>USAGE: ALL THE TIME (n=61)</th>
<th>LOW</th>
<th>MEDIUM</th>
<th>HIGH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bedroom</td>
<td>-1.163</td>
<td>0.307</td>
<td>0.856</td>
</tr>
<tr>
<td>Bathroom</td>
<td>-0.764</td>
<td>0.124</td>
<td>0.640</td>
</tr>
<tr>
<td>Public Areas</td>
<td>-0.130</td>
<td>-0.084</td>
<td>0.214</td>
</tr>
<tr>
<td>Food &amp; Beverage Facilities</td>
<td>-0.362</td>
<td>0.105</td>
<td>0.258</td>
</tr>
<tr>
<td>Guest Services</td>
<td>-0.207</td>
<td>-0.035</td>
<td>0.241</td>
</tr>
<tr>
<td>Recreation Facilities</td>
<td>-0.439</td>
<td>0.132</td>
<td>0.307</td>
</tr>
<tr>
<td>Exterior</td>
<td>-0.130</td>
<td>0.094</td>
<td>0.036</td>
</tr>
</tbody>
</table>

Table 19: Utility scores for hotel users by frequency of usage—most of the time

<table>
<thead>
<tr>
<th>USAGE: MOST OF THE TIME (n=265)</th>
<th>LOW</th>
<th>MEDIUM</th>
<th>HIGH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bedroom</td>
<td>-1.272</td>
<td>0.319</td>
<td>0.953</td>
</tr>
<tr>
<td>Bathroom</td>
<td>-0.746</td>
<td>0.127</td>
<td>0.619</td>
</tr>
<tr>
<td>Public Areas</td>
<td>-0.158</td>
<td>-0.111</td>
<td>0.270</td>
</tr>
<tr>
<td>Food &amp; Beverage Facilities</td>
<td>-0.213</td>
<td>0.028</td>
<td>0.185</td>
</tr>
<tr>
<td>Guest Services</td>
<td>-0.318</td>
<td>0.082</td>
<td>0.236</td>
</tr>
<tr>
<td>Recreation Facilities</td>
<td>-0.370</td>
<td>0.174</td>
<td>0.196</td>
</tr>
<tr>
<td>Exterior</td>
<td>-0.148</td>
<td>0.041</td>
<td>0.107</td>
</tr>
</tbody>
</table>

Table 20: Utility scores for hotel users by frequency of usage—some of the time

<table>
<thead>
<tr>
<th>USAGE: SOME OF THE TIME (n=111)</th>
<th>LOW</th>
<th>MEDIUM</th>
<th>HIGH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bedroom</td>
<td>-1.260</td>
<td>0.348</td>
<td>0.912</td>
</tr>
<tr>
<td>Bathroom</td>
<td>-0.786</td>
<td>0.183</td>
<td>0.603</td>
</tr>
<tr>
<td>Public Areas</td>
<td>-0.146</td>
<td>-0.089</td>
<td>0.235</td>
</tr>
<tr>
<td>Food &amp; Beverage Facilities</td>
<td>-0.223</td>
<td>-0.013</td>
<td>0.235</td>
</tr>
<tr>
<td>Guest Services</td>
<td>-0.284</td>
<td>0.088</td>
<td>0.196</td>
</tr>
<tr>
<td>Recreation Facilities</td>
<td>-0.331</td>
<td>0.177</td>
<td>0.154</td>
</tr>
<tr>
<td>Exterior</td>
<td>-0.106</td>
<td>0.111</td>
<td>-0.005</td>
</tr>
</tbody>
</table>

The typical approach is to compare the utility scores within one table; either across the three levels for one element, or across the elements at each of the three levels. However, because these tables were generated by the same conjoint model, it is feasible to make comparisons across the three tables, such as the utility scores for bedrooms across the three groups represented by the three tables. For example, it is worth noting that for those
who use hotels most of the time have the lowest score for a low quality bedroom, and the highest score for a high quality bedroom. As a result, they emerge as the most sensitive to the service / quality offering of the bedroom.

As found with the previous summary, there is considerable consistency in the strength of the three levels across the three different groups for all seven elements.
Chapter 5

CONCLUSION

In order to enhance the quality and reliability of rating systems, ratings agencies need to ensure that their rating and assessment paradigms reflect the needs and priorities of consumers. Whilst internally generated normative models may have been relied upon in the past, the growth in demand for pre-purchase information has heightened the need for assessment systems which truly reflect the needs and priorities of the public. The aim of this three stage research project was to address these needs.

The previous work by Colmar-Brunton met some elements of these needs, but did not address the key need of being able to assess the relative importance of the major elements which is required to underpin the weightings contained in the property assessment regime.

The work presented here addressed this need using conjoint analysis.

The most significant findings from this research relate to the enduring stability of the relative importance of the various elements and the stability of the trajectory of the utility scores.

In almost all instances, irrespective of the type of property, or approach used to segment the respondents (be it by accommodation usage rates or preferences or sociodemographic characteristics), there was a consistency in the relative importance of the items. The bedroom/sleeping area consistently scored in the vicinity of 26% whilst the bathroom scored in the vicinity of 18%. The other five items shared the remaining 55% somewhat equally, approximately 11% each. Whilst there may be instances of minor variations, such differences were not significant.

Similarly, the trajectory of the utility scores was remarkably consistent across the elements, the properties and the approach used to segment the respondents. In almost all instances, the trajectory was steeper from the “low” level to the “medium” level and less steep from the “medium” level to the “high” level.

Combined, these two findings set a clear agenda for the ratings auditors; establish an assessment regime that places approximately 25% of the weighting on the quality of the bedroom/sleeping areas, approximately 18% on the bathroom and approximately 11% on each of the remaining five elements. Furthermore, when assessing the actual quality, the scoring system must encourage improvements from a “low” quality to a “medium” more than encourage improvements from a “medium” to a high “quality”, without discouraging properties from pursuing excellent quality.
APPENDIX 1: CONJOINT ANALYSIS

Conjoint analysis, also known as “trade-off analysis” and “choice modelling”, is a multivariate research technique which is used in the marketing area of product development research. Conjoint analysis has a number of particular strengths which also make it useful in other areas of research where the respondents are confronted with decisions between competing options. This is even more the case when the options are composed of a number of component features which can be varied. For example, using conjoint analysis in hotel selection assumes that a hotel can be “decomposed” into a number of discrete key attributes (factors such as location, price or brand) which in turn can be offered at varying levels or degrees. For example, the hotel could be located in the CBD, fringe of CBD or outer suburbs. The hotel’s room rates could be low, average or high in comparison to its competitors or it could be an up-market prestigious hotel or a mid or even budget or down market hotel.

The development of a conjoint model was deemed to be the most effective means of identifying the consumers’ views of the priority of the key dimensions of star ratings. To obtain an in-depth understanding of conjoint analysis, three workshops were staged at AAATourism to help scope the instrument and more effectively interpret the results. The first provided background on the technique and the second two identified the key dimensions of the model and the levels within each dimension. The scenarios for the conjoint model covered six different types of accommodation (motels, hotels, caravan parks (sites and cabins) and self contained apartments). The conjoint modelling was administered online and the respondents were recruited by an online agency with the specification to source respondents between 18 and 70 years of age and who had taken at least one trip in the last 12 months.

Implicit in this modelling are the notions of rationality and utilitarianism. That is, people will select those options, products or services which they believe will produce the best outcome for them, and that this selection process involves ascribing a “utility score” to the various options and selecting the option which has the highest utility score.

Conjoint analysis produces a number of outputs which are particularly valuable to the analyst. They are:

1. Part worth or utility scores: The utility score is a measure of the perceived value of a particular level ie. inner CBD location or outer CBD location. Ultimately, the option with the highest utility score is the one selected.
2. Relative importance scores: Based upon the variation of the utility scores, conjoint analysis can calculate a score to measure the relative importance of each of the major components of the model, i.e. location, price or brand.
3. Internal reliability score: This score is similar to the r^2 of regression analysis. However, in this situation it is a measure of the internal consistency of the respondent in his/her decision making.

These measures have full metric values and thus they can be used in their raw form in product development decisions, i.e. identifying the hotel with the highest utility score combinations. They can also be used as inputs into further analysis (such as Markov Analysis) to evaluate the impact of changing the product mix on sales and market share.

In practice, conjoint analysis involves presenting to the respondent with a number of scenarios composed of various combinations and permutations of the attributes and their levels (different hotel types). The respondent has to score or rate each of the scenarios (hotels), usually in terms of how much they like (or would be prepared to stay at) that particular hotel as it is presented in the scenario. By analysing the changes in the respondent’s score from one scenario to another, it is possible to calculate the relative importance placed on the various attributes and their respective levels by each individual respondent.

The particular strength of conjoint analysis is that it “forces” people to make trade-offs amongst the various attributes of a hotel (hence the name trade-off analysis). This is particularly helpful to management because many of the key attributes are mutually exclusive or at least contradictory. For example, it is not practical (nor possible) to have a hotel in a inner CDB location, high prestige brand but low price. To this end, conjoint analysis stops respondents from saying that everything is very important and forces them to really consider which aspects of an hotel are really important to them.

Apart from its more obvious marketing applications, conjoint analysis has been used in transport management analysis, labour negotiations research and policy development research. For this example, we will use conjoint analysis to evaluate people’s opinions of different types of hotels in terms of three factors; location, price and image.

There were four key steps to conducting the research:

1. Identification of key attributes and their levels
   A literature review plus focus groups and discussions with customers, management and staff help define and operationalise the key attributes (the three major considerations of customers use in selecting a hotel; location, location,
price and brand) and the levels of those attributes (the strength or otherwise of these issues). The levels are usually expressed in terms of two levels (available or not) or three levels (low, medium or high). However, sometimes there can be four or more levels.

<table>
<thead>
<tr>
<th>FEATURE</th>
<th>LEVEL 1</th>
<th>LEVEL 2</th>
<th>LEVEL 3</th>
<th>LEVEL 4</th>
<th>LEVEL 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERCEIVED QUALITY</td>
<td>LUXURY</td>
<td>UPPER</td>
<td>MIDDLE</td>
<td>TOURIST</td>
<td>BUDGET</td>
</tr>
<tr>
<td>PRICE</td>
<td>$200+</td>
<td>$151-200</td>
<td>$101-$150</td>
<td>$70-$100</td>
<td></td>
</tr>
<tr>
<td>LOCATION</td>
<td>CBD</td>
<td>5-10 mins</td>
<td>10-20 mins</td>
<td>20-30 mins</td>
<td></td>
</tr>
</tbody>
</table>

2. Factorial Design
All possible combinations and permutations of the attributes and their levels would number in excess of 36 (4x3x3). Clearly, even 36 imaginary hotels would be too onerous for the respondent, so a factorial design technique was used which produced a total of 16 combinations and permutations which ensured coverage of most of the possible combinations. Of these 16 combinations (scenarios), 14 were used to develop the conjoint model whilst the remaining two scenarios were included to test the validity of the model.

For example:

<table>
<thead>
<tr>
<th>ASPECT</th>
<th>LEVEL</th>
<th>YOUR SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERCEIVED QUALITY</td>
<td>Luxury</td>
<td></td>
</tr>
<tr>
<td>PRICE</td>
<td>$101-$150</td>
<td></td>
</tr>
<tr>
<td>LOCATION</td>
<td>5-10 mins out</td>
<td></td>
</tr>
</tbody>
</table>

Conjoint analysis produces a conjoint model for each respondent. This model calculates the relative importance of each attribute and the perceived value of each of the levels of the attributes. These values can then be aggregated for market segment, other group, or total sample measures.

Because of its complexity, and a “role playing” requirement of the respondent, the administration of conjoint analysis is one of the more difficult interviewing or data gathering activities.

• The instructions to the respondent must be clear, concise and unambiguous.
• The respondent must focus only on the stimuli offered, i.e. the components of the particular scenario to be evaluated.
• The respondent must role play, i.e. make a serious and considered assessment of the scenario.
• The respondent must evaluate all of the scenarios in the conjoint questionnaire.

The optimal setting to administer a conjoint questionnaire is in private away from all distractions. The respondent must be comfortable and able to concentrate on the questionnaire. The provision of graphical stimuli such as picture boards and artists’ renditions also enhance the quality of the results. Finally, the respondent must have sufficient time to be able to stop and take short rests during the interview so as to avoid respondent fatigue and rushed decision making. As a consequence, each interview lasted in excess of one hour.

A seven factor @ three level conjoint model was proposed because that provided the “optimum” number of scenarios (20) that gives maximum information without provoking respondent fatigue.

The seven factors captured the “essence” of the accommodation facility, whilst the three levels for each factor conveyed an increasing level of sophistication for each factor in the respective type of accommodation.

The seven factors and examples of their elements are identified as:

• Accommodation (note, this was presented as “site” in the caravan park)
• Bathroom
• Public/private areas
• Services
• Recreation
• Exterior

The critical point with the levels is that they convey an increasing level of sophistication / quality / quantity wherein the low level is “less” whilst the higher level is “more”.

Outputs
There are three outputs from CA which the analyst can use.

1. Pearson’s R: The Pearson’s R fulfils the same role in conjoint analysis as it does in regression analysis. In this instance, the first 14 scenarios were used to develop the model whilst the 15th and 16th scenarios were “held out” and used to calculate the Pearson’s R. It becomes, in effect, a measure of the consistency of the respondent’s answers. Scores above 0.9 are consisted acceptable, those below indicate an unacceptable level of inconsistency in the respondent’s answers which may or may not be intended.
2. **Averaged importance:** The relative importance score is a true metric value which sums to 100%. As a consequence, the researcher is quickly able to identify those elements which have particularly high or low scores.

3. **Utility scores:** Each level of each element (dimension) has a utility score. These utility scores can then be aggregated for each possible combination to arrive at a total utility value for the combination. The combination with the highest utility score is the most preferred.
### APPENDIX 2: CONJOINT MODELLING MAPPING EXERCISE

**HOTEL:** Accommodation with licensed bar and restaurant onsite

<table>
<thead>
<tr>
<th>ITEM</th>
<th>NEW SYSTEM</th>
<th>EXISTING SYSTEM</th>
<th>PLAIN ENGLISH DESCRIPTION</th>
<th>LEVEL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bedroom</td>
<td>Bedroom</td>
<td>Your main accommodation room generally with bed and lounge area combined. Think about how it looks as well as its facilities such as the bed and linen, furniture such as wardrobe, bedside table, lounge and fixtures such as television, DVD player and/or sound system.</td>
<td>1</td>
<td>Small room with basic level and quality of facilities and no decorative enhancements.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inclusions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Furniture</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Entertainment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Systems</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interior Appearance and Décor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Bathroom</td>
<td>Bathroom</td>
<td>The bathroom would be ensuited to your bedroom and incorporates the shower and toilet, may also have a bath. Also think about bench and cupboard space as well as the towelling supplied.</td>
<td>1</td>
<td>Small room with basic level facilities, such as shower only and limited bench and cupboard space.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fittings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Accessories</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interior Appearance and Décor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Public Areas</td>
<td></td>
<td>Think about the appearance and look of the reception and foyer area and hallways to your room.</td>
<td>1</td>
<td>Small reception and foyer with little décor but functional, hallways well lit.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interior Appearance and Décor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Food and Beverage</td>
<td>Mini Bar</td>
<td>Food and beverage may be provided through a mini-bar, room service and/or an onsite restaurant.</td>
<td>1</td>
<td>Snacks and beverages provided through mini-bar and some meals available from</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Room Service</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Restaurant</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

<table>
<thead>
<tr>
<th>HOTEL: Accommodation with licensed bar and restaurant onsite</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5</strong> Services</td>
<td>Housekeeping Business Centre Guest Services</td>
</tr>
<tr>
<td></td>
<td>Think about the services the hotel provides for its guests, such as housekeeping, reception hours, internet access, laundry service, concierge and/or business centre.</td>
</tr>
<tr>
<td><strong>1</strong> None</td>
<td></td>
</tr>
<tr>
<td><strong>2</strong> Limited guest services, i.e. business hours reception, no laundry service or business centre.</td>
<td></td>
</tr>
<tr>
<td><strong>3</strong> Full guest services including 24 hour reception, laundry service, business centre and in room internet access.</td>
<td></td>
</tr>
<tr>
<td><strong>6</strong> Recreational Facilities</td>
<td>Outdoor Facilities Indoor Guest Facilities</td>
</tr>
<tr>
<td></td>
<td>A hotel’s recreational facilities may include pool, gym, spa and/or a massage service.</td>
</tr>
<tr>
<td><strong>1</strong> None</td>
<td></td>
</tr>
<tr>
<td><strong>2</strong> Swimming pool and/or gym</td>
<td></td>
</tr>
<tr>
<td><strong>3</strong> Swimming pool, gym and spa centre</td>
<td></td>
</tr>
<tr>
<td><strong>7</strong> Exterior</td>
<td>Exterior Appearance</td>
</tr>
<tr>
<td></td>
<td>Think about how the exterior of the hotel looks when you arrive—the building itself, signage, landscaping and entrance.</td>
</tr>
<tr>
<td><strong>1</strong> Outdated and tired façade with faded signage and poor lighting.</td>
<td></td>
</tr>
<tr>
<td><strong>2</strong> In need of a light refreshment but still welcoming and easy to locate.</td>
<td></td>
</tr>
<tr>
<td><strong>3</strong> Modern, fresh, well lit. Welcoming and easy to locate.</td>
<td></td>
</tr>
<tr>
<td><strong>0</strong> Not included</td>
<td>Cleanliness Location Atmosphere / Ambience Quality of Service Experienced</td>
</tr>
</tbody>
</table>

Items in *italics* are “distributed” a number of elements.
APPENDIX 3: DETAILED CONJOINT RESULTS

This section includes a series of graphs and charts for each of the six property types.

The graphs and charts are divided into two sections: the relative importance scores and the utility scores.

Furthermore, for each section, a range of graphs are presented:

- Overall sub sample
- By frequency of use
- By star rating preference
- By travel party composition
- By family structure

As noted, whilst nearly 1,400 respondents participated in the online survey, only 1,220 valid and usable responses were obtained and used in the conjoint analysis. The distribution of these responses is provided in the table below.

<table>
<thead>
<tr>
<th>PREFERRED ACCOMMODATION</th>
<th>NUMBER OF RESPONDENTS</th>
<th>RESPONDENTS INCLUDED IN CONJOINT ANALYSIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotel</td>
<td>495</td>
<td>448</td>
</tr>
<tr>
<td>Motel</td>
<td>381</td>
<td>336</td>
</tr>
<tr>
<td>Caravan Park Site</td>
<td>99</td>
<td>87</td>
</tr>
<tr>
<td>Caravan Park Cabin</td>
<td>119</td>
<td>102</td>
</tr>
<tr>
<td>Self Contained Unit / Holiday Flat</td>
<td>284</td>
<td>231</td>
</tr>
<tr>
<td>Hosted Accommodation B&amp;B Farmstay</td>
<td>19</td>
<td>16</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1,397</td>
<td>1,220</td>
</tr>
</tbody>
</table>

A few comments about each accommodation type are presented before presenting the graphs and charts.

**Motel Users**

There was a total of 337 motel users that completed the survey. Most of these stayed at 3.5 or 4 star motels. Similar to the hotel users, accommodation site and the bathroom were most important, with food and beverage of relative importance overall. These participants had grown up families or no children and were either holidaying alone or with a partner.

**Caravan Park Site Users**

There was a total of 99 caravan site users that completed the survey, who mostly stayed at 3.5 or 4 star caravan parks. These users considered that the accommodation site, the bathroom and the public and private areas were most important. The majority of participants had an older family and were either holidaying alone or with a partner.

**Caravan Park Cabin Users**

There was a total of 119 caravan park cabin users that completed the survey, who mostly stayed in 4 star caravan park accommodation. These users considered that the bathroom, food and beverage the accommodation site were most important. The majority of these participants had an older family and were either holidaying alone or with a partner.

**Self Contained Accommodation Users**

There was a total of 232 self contained accommodation users that completed the survey. These users considered that food and beverage, private and public areas and the accommodation site were most important. The majority of this group used 4 star accommodation. These participants had grown up families or no children and were either holidaying alone or with a partner.
Hosted Accommodation

There was a total of 16 valid respondents who stayed in and evaluated hosted accommodation. Unfortunately, this is too small a sample to undertake any meaningful analysis.
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

HOTEL USERS

On business and travelling alone (n=63)
On holidays alone or with partner and no children (n=215)
On holidays with adult friends and/or immediate family and/or extended family but no children (n=100)
On holidays with adult friends and/or immediate family and/or extended family and with children (n=78)

SUB GROUP CATEGORY

RELATIVE IMPORTANCE

Exterior
Recreation
Services
Food & Beverage
Public Areas
Bathroom
Accommodation

Do not have children (n=209)
Younger family, mostly under 10 years (n=79)
Middle family, mostly young teenagers (n=32)
Older family, independent adults (n=128)

SUB GROUP CATEGORY

RELATIVE IMPORTANCE

Exterior
Recreation
Services
Food & Beverage
Public Areas
Bathroom
Accommodation

Do not have children (n=209)
Younger family, mostly under 10 years (n=79)
Middle family, mostly young teenagers (n=32)
Older family, independent adults (n=128)
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

MOTEL USERS

<table>
<thead>
<tr>
<th>SUB GROUP CATEGORY</th>
<th>RELATIVE IMPORTANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>All the time (n=31)</td>
<td></td>
</tr>
<tr>
<td>Most of the time (n=187)</td>
<td></td>
</tr>
<tr>
<td>Some of the time (n=106)</td>
<td></td>
</tr>
<tr>
<td>Rarely (n=10)</td>
<td></td>
</tr>
<tr>
<td>Never (n=3)</td>
<td></td>
</tr>
</tbody>
</table>

MOTEL USERS

<table>
<thead>
<tr>
<th>SUB GROUP CATEGORY</th>
<th>RELATIVE IMPORTANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL (n=337)</td>
<td></td>
</tr>
</tbody>
</table>

Legend:
- Exterior
- Recreation
- Services
- Food & Beverage
- Public Areas
- Bathroom
- Accommodation
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

**MOTEL USERS**

SUB GROUP CATEGORY

<table>
<thead>
<tr>
<th>Sub Group Category</th>
<th>Exterior</th>
<th>Recreation</th>
<th>Services</th>
<th>Food &amp; Beverage</th>
<th>Public Areas</th>
<th>Bathroom</th>
<th>Accommodation</th>
</tr>
</thead>
<tbody>
<tr>
<td>On business and travelling alone (n=34)</td>
<td><img src="image1" alt="Graph" /></td>
<td><img src="image2" alt="Graph" /></td>
<td><img src="image3" alt="Graph" /></td>
<td><img src="image4" alt="Graph" /></td>
<td><img src="image5" alt="Graph" /></td>
<td><img src="image6" alt="Graph" /></td>
<td><img src="image7" alt="Graph" /></td>
</tr>
<tr>
<td>On holidays alone or with partner and no children (n=197)</td>
<td><img src="image8" alt="Graph" /></td>
<td><img src="image9" alt="Graph" /></td>
<td><img src="image10" alt="Graph" /></td>
<td><img src="image11" alt="Graph" /></td>
<td><img src="image12" alt="Graph" /></td>
<td><img src="image13" alt="Graph" /></td>
<td><img src="image14" alt="Graph" /></td>
</tr>
<tr>
<td>On holidays with adult friends and/or immediate family and/or extended family but no children (n=61)</td>
<td><img src="image15" alt="Graph" /></td>
<td><img src="image16" alt="Graph" /></td>
<td><img src="image17" alt="Graph" /></td>
<td><img src="image18" alt="Graph" /></td>
<td><img src="image19" alt="Graph" /></td>
<td><img src="image20" alt="Graph" /></td>
<td><img src="image21" alt="Graph" /></td>
</tr>
<tr>
<td>On holidays with adult friends and/or immediate family and/or extended family and with children (n=45)</td>
<td><img src="image22" alt="Graph" /></td>
<td><img src="image23" alt="Graph" /></td>
<td><img src="image24" alt="Graph" /></td>
<td><img src="image25" alt="Graph" /></td>
<td><img src="image26" alt="Graph" /></td>
<td><img src="image27" alt="Graph" /></td>
<td><img src="image28" alt="Graph" /></td>
</tr>
</tbody>
</table>

**MOTEL USERS**

SUB GROUP CATEGORY

<table>
<thead>
<tr>
<th>Sub Group Category</th>
<th>Exterior</th>
<th>Recreation</th>
<th>Services</th>
<th>Food &amp; Beverage</th>
<th>Public Areas</th>
<th>Bathroom</th>
<th>Accommodation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 3.0 star (n=4)</td>
<td><img src="image29" alt="Graph" /></td>
<td><img src="image30" alt="Graph" /></td>
<td><img src="image31" alt="Graph" /></td>
<td><img src="image32" alt="Graph" /></td>
<td><img src="image33" alt="Graph" /></td>
<td><img src="image34" alt="Graph" /></td>
<td><img src="image35" alt="Graph" /></td>
</tr>
<tr>
<td>3.0 star (n=33)</td>
<td><img src="image36" alt="Graph" /></td>
<td><img src="image37" alt="Graph" /></td>
<td><img src="image38" alt="Graph" /></td>
<td><img src="image39" alt="Graph" /></td>
<td><img src="image40" alt="Graph" /></td>
<td><img src="image41" alt="Graph" /></td>
<td><img src="image42" alt="Graph" /></td>
</tr>
<tr>
<td>3.5 star (n=108)</td>
<td><img src="image43" alt="Graph" /></td>
<td><img src="image44" alt="Graph" /></td>
<td><img src="image45" alt="Graph" /></td>
<td><img src="image46" alt="Graph" /></td>
<td><img src="image47" alt="Graph" /></td>
<td><img src="image48" alt="Graph" /></td>
<td><img src="image49" alt="Graph" /></td>
</tr>
<tr>
<td>4.0 star (n=194)</td>
<td><img src="image50" alt="Graph" /></td>
<td><img src="image51" alt="Graph" /></td>
<td><img src="image52" alt="Graph" /></td>
<td><img src="image53" alt="Graph" /></td>
<td><img src="image54" alt="Graph" /></td>
<td><img src="image55" alt="Graph" /></td>
<td><img src="image56" alt="Graph" /></td>
</tr>
<tr>
<td>4.5 star (n=99)</td>
<td><img src="image57" alt="Graph" /></td>
<td><img src="image58" alt="Graph" /></td>
<td><img src="image59" alt="Graph" /></td>
<td><img src="image60" alt="Graph" /></td>
<td><img src="image61" alt="Graph" /></td>
<td><img src="image62" alt="Graph" /></td>
<td><img src="image63" alt="Graph" /></td>
</tr>
<tr>
<td>5.0 star (n=50)</td>
<td><img src="image64" alt="Graph" /></td>
<td><img src="image65" alt="Graph" /></td>
<td><img src="image66" alt="Graph" /></td>
<td><img src="image67" alt="Graph" /></td>
<td><img src="image68" alt="Graph" /></td>
<td><img src="image69" alt="Graph" /></td>
<td><img src="image70" alt="Graph" /></td>
</tr>
</tbody>
</table>
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

**Motel Users**

- **Do not have children** (n=97)
- **Younger family, mostly under 10 years** (n=40)
- **Middle family, mostly young teenagers** (n=37)
- **Older family, independent adults** (n=163)

**Caravan Park Site Users**

- **(n=99)**

---

**RELATIVE IMPORTANCE**

- Exterior
- Recreation
- Services
- Food & Beverage
- Public Areas
- Bathroom
- Accommodation

---

**SUB GROUP CATEGORY**

- Exterior
- Recreation
- Services
- Food & Beverage
- Public Areas
- Bathroom
- Accommodation
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

CARAVAN PARK SITE USERS

SUB GROUP CATEGORY

RELATIVE IMPORTANCE

Exterior
Recreation
Services
Food & Beverage
Public Areas
Bathroom
Site

CARAVAN PARK SITE USERS

SUB GROUP CATEGORY

RELATIVE IMPORTANCE

Exterior
Recreation
Services
Food & Beverage
Public Areas
Bathroom
Site
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

CARAVAN PARK SITE USERS

SUB GROUP CATEGORY

RELATIVE IMPORTANCE

Exterior
Recreation
Services
Food & Beverage
Public Areas
Bathroom
Site

0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%

On business and travelling alone (n=2)
On holidays alone or with partner and no children (n=66)
On holidays with adult friends and/or immediate family and/or extended family but no children (n=14)
On holidays with adult friends and/or immediate family and/or extended family and with children (n=17)

Do not have children (n=15)
Younger family, mostly under 10 years (n=10)
Middle family, mostly young teenagers (n=15)
Older family, independent adults (n=41)

SUB GROUP CATEGORY

RELATIVE IMPORTANCE
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

CARAVAN PARK CABIN USERS

RELATIVE IMPORTANCE

SUB GROUP CATEGORY

CARAVAN PARK CABIN USERS

RELATIVE IMPORTANCE

SUB GROUP CATEGORY

- Exterior
- Recreation
- Services
- Food & Beverage
- Private Areas
- Bathroom
- Accommodation
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

CARAVAN PARK CABIN USERS

<table>
<thead>
<tr>
<th>SUB GROUP CATEGORY</th>
<th>RELATIVE IMPORTANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do not have children (n=25)</td>
<td></td>
</tr>
<tr>
<td>Younger family, mostly under 10 years (n=15)</td>
<td>Exterior 60% recreation 10% services 20%</td>
</tr>
<tr>
<td>Middle family, mostly young teenagers (n=4)</td>
<td>exterior 70% recreation 20% services 10%</td>
</tr>
<tr>
<td>Older family, independent adults (n=47)</td>
<td>Accommodation 40% food &amp; beverage 20% private areas 20%</td>
</tr>
</tbody>
</table>

TOTAL SAMPLE (n=448)

HOTEL

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>UTILITY SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bedroom</td>
<td></td>
</tr>
<tr>
<td>Bathroom</td>
<td></td>
</tr>
<tr>
<td>Public Areas</td>
<td></td>
</tr>
<tr>
<td>Food &amp; Beverage Facilities</td>
<td></td>
</tr>
<tr>
<td>Guest Services</td>
<td></td>
</tr>
<tr>
<td>Recreation Facilities</td>
<td></td>
</tr>
<tr>
<td>Exterior</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL SAMPLE (n=448)
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

**HOTEL**

**USAGE: ALL THE TIME (n=61)**

**HOTEL**

**USAGE: MOST OF THE TIME (n=265)**
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

![Graph 1: Hotel Utility Scores](image1)

**Usage:** Some of the Time (n=111)

**Star Rating:** 3.0 (n=29)

![Graph 2: Hotel Utility Scores](image2)
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

STAR RATING: 3.5 (n=64)

STAR RATING: 4.0 (n=194)
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

HOTEL

STAR RATING: 4.5 (n=99)

HOTEL

STAR RATING: 5.0 (n=50)
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

TRAVEL PARTY: ON BUSINESS ALONE (n=63)

TRAVEL PARTY: ON HOLIDAYS ADULTS NO KIDS (n=100)
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

HOTEL

TRAVEL PARTY: ON HOLIDAYS ADULTS AND KIDS (n=70)

FAMILY STRUCTURE: NO KIDS (n=209)
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

**HOTEL**

![Graph showing different utility scores for various family structures](image)

**FAMILY STRUCTURE: YOUNGER FAMILY KIDS (n=79)**

**FAMILY STRUCTURE: MIDDLE FAMILY TEENAGERS (n=32)**
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

HOTEL

TOTAL SAMPLE (n=337)

Motel

TOTAL SAMPLE (n=337)
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

**MOTEL**

**USAGE: SOME OF THE TIME (n=106)**

**UTILITY SCORE**

- Accommodation
- Bathroom
- Public Areas
- Food & Beverage
- Services
- Recreation
- Exterior

**STAR RATING: 3.0 (n=33)**

- Accommodation
- Bathroom
- Public Areas
- Food & Beverage
- Services
- Recreation
- Exterior
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

MOTEL

STAR RATING: 4.5 (n=47)

TRAVEL PARTY: ON BUSINESS ALONE (n=34)
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

MOTEL

TRAVEL PARTY: PARTNER NO KIDS (n=197)

MOTEL

TRAVEL PARTY: ADULTS NO KIDS (n=61)
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

TRAVEL PARTY: ADULTS AND KIDS (n=45)

FAMILY STRUCTURE: NO KIDS (n=97)
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

MOTEL

FAMILY STRUCTURE: YOUNG KIDS (n=40)

FAMILY STRUCTURE: MIDDLE TEENAGERS (n=37)
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

**Motel**

FAMILY STRUCTURE: INDEPENDENT ADULTS (n=163)

**Caravan Park Site**

TOTAL SAMPLE (n=87)
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

CARAVAN PARK SITE

USAGE: MOST OF THE TIME (n=59)

CARAVAN PARK SITE

STAR RATING: 3.5 STAR (n=25)
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

CARAVAN PARK SITE

STAR RATING: 4 STAR (n=24)

FAMILY STRUCTURE: OLDER FAMILY, INDEPENDENT ADULTS (n=41)
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

CARAVAN PARK SITE

TRAVEL PARTY: PARTNER NO KIDS (n=59)

CARAVAN PARK CABINS

TOTAL SAMPLE (n=102)
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

CARAVAN PARK CABINS

USAGE: MOST OF THE TIME (n=50)

CARAVAN PARK CABINS

USAGE: SOME OF THE TIME (n=34)
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

CARAVAN PARK CABINS

TRAVEL PARTY: PARTNER NO KIDS (n=56)

CARAVAN PARK CABINS

TRAVEL PARTY: EXTENDED FAMILY/FRIENDS AND KIDS (n=32)
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

CARAVAN PARK CABINS

FAMILY STRUCTURE: DO NOT HAVE CHILDREN (n=21)

UTILITY SCORE

FAMILY STRUCTURE: YOUNG FAMILY, KIDS UNDER 10 (n=23)

UTILITY SCORE
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

CARAVAN PARK CABINS

FAMILY STRUCTURE: YOUNG FAMILY, KIDS UNDER 10 (n=23)

SELF CONTAINED UNITS

TOTAL SAMPLE (n=232)
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGs IN ACCOMMODATION

SELF CONTAINED UNITS

![Graph showing utility scores for various aspects of accommodation, bathroom, private areas, food & beverage, services, recreation, and exterior for usage most of the time (n=128).](image)

SELF CONTAINED UNITS

![Graph showing utility scores for various aspects of accommodation, bathroom, private areas, food & beverage, services, recreation, and exterior for usage some of the time (n=80).](image)
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

SELF CONTAINED UNITS

STAR RATING: 3.5 STAR (n=40)

STAR RATING: 4.0 STAR (n=101)
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

SELF CONTAINED UNITS

STAR RATING: 4.5 STAR (n=51)

STAR RATING: 5.0 STAR (n=21)
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

TRAVEL PARTY: PARTNER NO KIDS (n=116)

TRAVEL PARTY: ADULTS NO KIDS (n=52)
Understanding the key elements of star ratings in accommodation.

SELF CONTAINED UNITS

TRAVEL PARTY: ADULTS AND KIDS (n=57)

FAMILY STRUCTURE: NO KIDS (n=61)
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

SELF CONTAINED UNITS

FAMILY STRUCTURE: YOUNG KIDS (n=45)

SELF CONTAINED UNITS

FAMILY STRUCTURE: MIDDLE TEENS (n=30)
UNDERSTANDING THE KEY ELEMENTS OF STAR RATINGS IN ACCOMMODATION

SELF CONTAINED UNITS

FAMILY STRUCTURE: INDEPENDENT ADULTS (n=96)
REFERENCES


Michelin Restaurants History (n.d.) "3 Star restaurants."


AUTHORS

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Prof. Leo Jago
Dr Leo Jago is a Professor in the School of Hospitality, Tourism and Marketing at Victoria University. Until 2007 he was Director of Research of the Sustainable Tourism Cooperative Research Centre. Leo has been involved in the evaluation of special events for 14 years, focusing on the economic, social and branding impacts of events. Aside from special events, Leo has research interests in tourism marketing, tourist behaviour and small enterprise management. Leo was Chair of CAUTHE for three years and is a board member of a range of public and private organisations associated with tourism.
Email: Leo.Jago@vu.edu.au
- Travel and tourism industry
- Academic researchers
- Government policy makers

**COMMERCIALISE**

**RESEARCH AND DEVELOPMENT**

**COLLABORATION**

**EDUCATION AND TRAINING**

**UTILISE**

- New products, services and technologies
- Uptake of research finding by business, government and academia
- Improved business productivity
- Industry-ready post-graduate students
- Public good benefits for tourism destinations

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**INDUSTRY PARTNERS**

- TTF
- Parks Victoria
- Tourism Victoria
- ECU
- Griffith University
- JCU
- Monash University
- Charles Darwin University
- University of South Australia
- ATEC

**UNIVERSITY PARTNERS**

- University of Technology Sydney
- Curtin University
- UNSW
- UTAS

**COMMERCIALISATION**

EC3, a wholly-owned subsidiary company, takes the outcomes from the relevant STCRC research; develops them for market; and delivers them to industry as products and services. EC3 delivers significant benefits to the STCRC through the provision of a wide range of business services both nationally and internationally.

**KEY EC3 PRODUCTS**

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Chairman: Stephen Gregg
Chief Executive: Ian Kean
Director of Research: Prof. David Simmons

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Sustainable Tourism Cooperative Research Centre (STCRC) is established under the Australian Government's Cooperative Research Centres Program.

STCRC is the world’s leading scientific institution delivering research to support the sustainability of travel and tourism—one of the world’s largest and fastest growing industries.

Introduction

STCRC has grown to be the largest dedicated tourism research organisation in the world, with $187 million invested in tourism research programs, commercialisation and education since 1997.

STCRC was established in July 2003 under the Commonwealth Government’s CRC program and is an extension of the previous Tourism CRC, which operated from 1997 to 2003.

Role and responsibilities

The Commonwealth CRC program aims to turn research outcomes into successful new products, services and technologies. This enables Australian industries to be more efficient, productive and competitive.

The program emphasises collaboration between businesses and researchers to maximise the benefits of research through utilisation, commercialisation and technology transfer.

An education component focuses on producing graduates with skills relevant to industry needs.

STCRC’s objectives are to enhance:

- the contribution of long-term scientific and technological research and innovation to Australia’s sustainable economic and social development;
- the transfer of research outputs into outcomes of economic, environmental or social benefit to Australia;
- the value of graduate researchers to Australia;
- collaboration among researchers, between searchers and industry or other users; and
- efficiency in the use of intellectual and other research outcomes.